

Serial No.: 09/400,346

Attorney Docket No: MCS-058-99

REMARKS

In response to the final Office Action dated July 26, 2005, claims 1, 11, 16, 93, 94 and 96-98 have been amended. Therefore, claims 1-20 and 93-98 remain in the case. The Applicants respectfully request that this amendment be entered under 37 C.F.R. 1.116 to place the above-referenced application in condition for allowance or, alternatively, in better condition for appeal. Reexamination and reconsideration of the amended application are requested.

Rebuttal to "Response to Amendment and Arguments"

The Office Action stated that "the Applicant mainly argues . . . that the prior arts do not teach the history-based predictions for a single value of a pixel in an image sequence. The Examiner respectfully disagrees. Since the Applicant claimed the limitation broadly and does not explicitly defined that history-based predictions are predictions based on a history of actual pixel values in the claims, it could also mean predictions are made based on previous frames."

In response, the Applicants have amended independent claims 1, 11, 16, 93, and 94 to clarify has the history-based predictions are made. These claims now make it clear that the history-based predictions are made: (1) based on a history of actual pixel values; and (2) based on a history of predicted pixel values.

Specifically, amended claim 1 recites that "the history-based prediction [are] based on a history of actual pixel values and a history of predicted pixel values".

Amended claim 11 recites that "the two history-based predictions [are] based on a history of actual pixel values and a history of predicted pixel values".

Amended claim 16 recites that the history-based predictors [are] based on a history of actual pixel values and a history of predicted pixel values".

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Amended claim 93 recites that "the two history-based predictions [are] based on a history of actual pixel values of the pixel and a history of predicted pixel values for the pixel."

Amended claim 94 recites that "the predictions [are] based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel".

Claim 95 already recites the features: (1) "storing a list of actual history pixel value representing a history of actual pixel values for the pixel"; and (2) storing a list of predicted history pixel values representing a history of predicted pixel values".

The Office Action also stated that "Wakitani also teaches history-based prediction (column 14, lines 25-40 and column 16, lines 1-10)."

Applicants rebut this argument by pointing out that Wakitani is lacking the Applicants' claimed feature of providing multiple history-based predictions of a pixel value for each pixel in an image sequence, where the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values.

Wakitani merely discloses providing two types of prediction values, not a pixel value. These prediction values are indicative of the usefulness of the prediction (which happens to be motion prediction). In other words, Wakitani has two indicators that denote how likely it is that a pixel will be at the location predicted. In particular, one value or indicator in Wakitani is a correlation value, which is "an index of a degree of the approximation (col. 3, lines 9-10). Another one value or indicator is a "prediction value, which indicates a maximum probability at an existence prediction position of the moving-target at the next position represented by the prediction motion vector" (col. 6, lines 45-48; emphasis added).

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Note that these prediction values are not predictions about the movement or motion of a pixel, but merely values that indicate whether a prediction is good or bad. The actual motion prediction is a single prediction that predicts a location to which a pixel is moving. Once this prediction is made, the two types of prediction values are used to determine the effectiveness of that single prediction. Both of these values or indicators indicate the worth of the prediction about as to where a target pixel is moving, and are not the same as making predictions about a pixel value.

The Office Action also stated that Talluri et al. teaches the Applicants' claimed history-based predictions. However, Applicants rebut this argument by pointing out that Talluri et al. merely disclose obtaining a residual image by subtracting a predicted frame from the input frame. This residual image is the "difference between predicted and actual pixel values" (col. 13, lines 9-12). However, Talluri et al. do not disclose the Applicants' claimed feature of making multiple history-based predictions about a single pixel, where the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values.

Section 112, First Paragraph Rejection and Claim Objections

The Office Action rejected claim 96-98 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. In addition, the Office Action objected to claims 96-98 as being difficult to understand based on the 35 U.S.C. § 112, first paragraph objections. The Office Action maintained that the claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

In particular, regarding claims 96 and 97, the Office Action maintained that "the term p needs to be defined. The Examiner believes that the Applicant mistakenly deleted the definition of p ."

Regarding claim 98, the Office Action maintained that "the term n as a number of

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actual history pixel values is not a part of disclosed equation in the claims." In addition, the Office Action maintained that the Applicants' specification "does not provide the support for this."

In response, the Applicants have amended claims 96-98 to overcome this rejection. Based on the amendment to claims 96-98, the Applicants submit that the rejection of claims 96-98 under 35 U.S.C. § 112, first paragraph and the claims objections have been overcome.

Section 103(a) Rejections

The Office Action rejected claims 1-7 and 9-19 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Sambonsugi et al. (U.S. Patent No. 6,335,985) in view of Wakitani (U.S. Patent No. 6,031,568). The Office Action stated that Sambonsugi et al. disclose all elements of the Applicants' claimed invention except that "Sambonsugi et al. does not clearly teach a prediction module that provides predictions for a value of each of the plurality of pixels." However, the Office Action stated that Wakitani "teaches object tracking (abstract) in sequence image (column 1, lines 6-10) further comprises a prediction module (FIG. 2, box 62) that provides predictions for a value of each of the plurality of pixels (motion prediction value and motion prediction maps for each of the plurality of the pixels) (the prediction values for each associated pixel using prediction value map for the search area on the subsequent frame) (column 14, lines 25-39) (Column 14, lines 28-30; column 19, lines 35-67; and column 20, lines 43-61)." Therefore, the Office Action asserted that it would have been obvious to modify Sambonsugi's method of maintaining a background model for an image sequence according to Wakitani such that the combination would be able to predict motion values of each pixel and use them for motion mapping to predict the motion of the tracking object in the image sequence.

In response, the Applicants respectfully traverse these rejections based on the amendments to claims 1, 11 and 16 and the following legal and technical analysis. The Applicants submit that the combination of Sambonsugi et al. and Wakitani lacks features of the Applicants' claimed invention. In particular, Sambonsugi et al. and

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Wakitani do not disclose, either explicitly or implicitly, the material claimed feature of providing multiple history-based predictions of a pixel value for each pixel in an image sequence, where the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values.

Further, Sambonsugi et al. and Wakitani fail to appreciate the advantages of this claimed feature. In addition, there is no technical suggestion or motivation disclosed in Sambonsugi et al. or Wakitani to define this claimed feature. Thus, the Applicants submit that the combination of Sambonsugi et al. and Wakitani cannot make obvious the Applicants' claimed feature of providing multiple history-based predictions of a pixel value for each pixel in an image sequence.

To make a prima facie showing of obviousness, all of the claimed features of an Applicants' invention must be considered, especially when they are missing from the prior art. If a claimed feature is not disclosed in the prior art and has advantages not appreciated by the prior art, then no prima facie showing of obviousness has been made. The Federal Circuit Court has held that it was an error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Moreover, as stated in the MPEP, if a prior art reference does not disclose, suggest or provide any motivation for at least one claimed feature of an Applicants' invention, then a prima facie case of obviousness has not been established (MPEP § 2142).

Amended independent Claims 1, 11 and 16

Amended independent claim 1 of the Applicants' claimed invention includes a system for maintaining a background model of an image sequence having a plurality of pixels. The system includes a pixel processing module that processes the image sequence on a pixel scale, and a prediction module that provides history-based predictions for a value of each of the plurality of pixels. The history-based predictions are based on a history of actual pixel values and a history of predicted pixel values. The

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system also includes at least one refinement module that processes the image sequence on a spatial scale other than the pixel scale.

Amended independent claim 11 of the Applicants' claimed invention includes a computer-readable medium having computer-executable modules including a pixel processing module that processes an image sequence on a pixel scale. The pixel processing module further includes a prediction module that provides at least two history-based predictions of what value a particular pixel will be in a next frame of the image sequence to be processed and provides these predictions for each pixel within the image sequence. The two history-based predictions are based on a history of actual pixel values and a history of predicted pixel values. The pixel processing module also includes at least one refinement module that processes the image sequence on a spatial scale other than the pixel scale.

Amended independent claim 16 of the Applicants' claimed invention includes a method for maintaining a background model of an image sequence having a plurality of pixels. The method includes processing the image sequence on a pixel scale so as to determine a current background model and provide an initial assignment for each of the plurality of pixels, and calculating history-based predictors for a value of each of the plurality of pixels. The history-based predictors are based on a history of actual pixel values and a history of predicted pixel values. The method further includes refining the pixel processing by processing on a spatial scale other than the pixel scale to further refine at least one of: (a) the current background model; (b) the initial pixel assignments.

The Applicants' claimed invention includes multiple history-based predictions. These multiple history-based predictions are based on a history of actual pixel values and a history of predicted pixel values. In particular, "at least one of the multiple predictions is based on a history of actual pixel values while at least one of the other predictions is based on a history of predicted pixel values" (specification, page 24, lines 8-10; emphasis added). Thus, background maintenance is achieved by providing multiple history-based

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predictions (using both actual and predicted values of the pixel) for a single value of a pixel for every pixel in an image sequence.

The combination of Sambonsugi et al. and Wakitani also fails to appreciate or recognize the advantages of the Applicants' claimed feature of providing multiple history-based predictions of a pixel value for each pixel in an image sequence, wherein the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values. In particular, history-based pixel value predictions using both a history of actual pixel values and a history of predicted pixel values allow the Applicants' claimed invention to maintain a "reasonably accurate representation of the background so that the background and the foreground can be distinguished in each frame of the image sequence" (specification, page 2, lines 12-15). The combination of Sambonsugi et al. and Wakitani fail to discuss or appreciate these advantages of the Applicants' claimed feature of providing multiple history-based predictions of a pixel value for each pixel in an image sequence, where the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values.

The Applicants, therefore, submit that obviousness cannot be established since the combination of Sambonsugi et al. and Wakitani fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of providing multiple history-based predictions of a pixel value for each pixel in an image sequence, where the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values. In addition to explicitly lacking this feature, the combination of Sambonsugi et al. and Wakitani also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination of Sambonsugi et al. and Wakitani fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Sambonsugi et al. and Wakitani does not render the Applicants' claimed invention obvious because each of the references is missing the material feature of the Applicants' claimed invention of providing multiple history-based predictions of a pixel

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value for each pixel in an image sequence, where the history-based predictions are based on a history of actual pixel values and a history of predicted pixel values. Consequently, because a prima facie case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that independent claims 1, 11 and 16 are patentable under 35 U.S.C. § 103(a) over Sambonsugi et al. in view of Wakitani based on the amendments to claims 1, 11 and 16 and the legal and technical arguments set forth above and below. Moreover, claims 2-7, 9 and 10 depend from amended independent claim 1, claims 12-15 depends from amended independent claim 11, and claims 17-19 depend from amended independent claim 16 and are also nonobvious over Sambonsugi et al. in view of Wakitani (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claims 1-7 and 9-19.

The Office Action rejected claim 93 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Sambonsugi et al. in view of Wakitani and further in view of Black et al. (U.S. Patent No. 5,802,203). The Office Action stated that Sambonsugi et al. and Wakitani disclose all elements of the Applicants' claimed invention except that "Sambonsugi et al. and Wakitani do not explicitly teach a prediction module that provides predictions without using motion prediction." However, the Office Action stated that Black et al. "teaches an image processing method wherein a prediction module that provides at least two pixel value predictions (predicted pixel brightness values at each pixel has nothing to do with motion prediction) (column 9, lines 19-37)." Therefore, the Office Action asserted that it would have been obvious to modify Sambonsugi's method of processing an image sequence according to Black et al. to further predict the brightness values of each pixel.

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In response, the Applicants respectfully traverse these rejections based on the amendment to claim 93 and the following legal and technical analysis. The Applicants submit that the combination of Sambonsugi et al., Wakitani and Black et al. lacks a material feature of the Applicants' claimed invention. In particular, the combination does not disclose, either explicitly or implicitly, the material claimed feature of a prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels, the two history-based predictions based on a history of actual pixel values for the pixel and a history of predicted pixel values for the pixel.

Further, Sambonsugi et al., Wakitani and Black et al. fail to appreciate the advantages of this claimed feature. In addition, there is no technical suggestion or motivation disclosed in Sambonsugi et al., Wakitani or Black et al. to define this claimed feature. Thus, the Applicants submit that the combination of Sambonsugi et al., Wakitani and Black et al. cannot make obvious the Applicants' claimed feature of a prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels, the two history-based predictions based on a history of actual pixel values for the pixel and a history of predicted pixel values for the pixel.

Amended independent claim 93 of the Applicants' claimed invention includes a system for background maintenance of an image sequence having a plurality of pixels. The system includes a pixel processing module that processes the image sequence on a pixel scale, and a prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels. The two history-based predictions are based on a history of actual pixel values for the pixel and a history of predicted pixel values. The system also includes at least one refinement module that processes the image sequence on a spatial scale different from the pixel scale.

As discussed above, both Sambonsugi et al. and Wakitani are lacking this material claimed feature.

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Black et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. In contrast to the Applicants' claimed prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels, the two history-based predictions based on a history of actual pixel values for the pixel and a history of predicted pixel values for the pixel, Black et al. merely disclose determining "new residual values" using "actual brightness values" and "updated predicted brightness values" (col. 9, lines 25-30). A predicted brightness value is used to compute the residual for a pixel. However, unlike the Applicants' claimed invention, the prediction in Black et al. is not history based. In addition, Black et al. does not make at least two predictions about a value of a single pixel for every pixel in an image sequence.

Sambonsugi et al., Wakitani and Black et al. also fail to appreciate or recognize the advantages of the Applicants' claimed feature of a prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels, the two history-based predictions based on a history of actual pixel values for the pixel and a history of predicted pixel values for the pixel. These advantages are discussed above.

The Applicants, therefore, submit that obviousness cannot be established since the combination of Sambonsugi et al., Wakitani and Black et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of a prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels, the two history-based predictions based on a history of actual pixel values for the pixel and a history of predicted pixel values for the pixel. In addition to explicitly lacking this feature, the combination of Sambonsugi et al., Wakitani and Black et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Sambonsugi et al., Wakitani and Black et al. does not render the Applicants' claimed

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invention obvious because each of the references is missing the material feature of the Applicants' claimed invention of a prediction module that provides at least two history-based predictions of a pixel value for each of the plurality of pixels, the two history-based predictions based on a history of actual pixel values for the pixel and a history of predicted pixel values for the pixel. Consequently, because a prima facie case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 93 is patentable under 35 U.S.C. § 103(a) over Sambonsugi et al. in view of Wakitani and further in view of Black et al. based on the amendments to claim 93 and the legal and technical arguments set forth above and below. The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claim 93.

The Office Action rejected claim 94 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Sambonsugi et al. in view of Wakitani and further in view of Talluri et al. (U.S. Patent No. 6,026,183). The Office Action stated that Sambonsugi et al. and Wakitani disclose all elements of the Applicants' claimed invention except that "Sambonsugi et al. and Wakitani do not clearly teach the concept of disclosing the concept of the predictions based on a actual history of pixel values for the predicted pixel and a predicted history of pixel values for the predicted pixel." However, the Office Action stated that Talluri et al. "teaches an image processing wherein using the prediction process (col. 13, lines 9-10) of an actual history of pixel values (actual pixel values) for the predicted pixel and a predicted history (predicted values) of pixel values for the predicted pixel (col. 13, lines 10-15)." Therefore, the Office Action asserted that it would have been obvious to modify Sambonsugi's method of processing an image sequence according to Talluri et al. to be able to perform motion compensation on the input frame in order to improve processing.

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In response, the Applicants respectfully traverse these rejections based on the amendments to claim 94 and the following legal and technical analysis. The Applicants submit that the combination of Sambonsugi et al., Wakitani and Talluri et al. lacks a material feature of the Applicants' claimed invention. In particular, the combination does not disclose, either explicitly or implicitly, the material claimed feature of calculating a plurality of predictors to provide predictions of a value of each of the plurality of pixels, the predictions based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel.

Further, Sambonsugi et al., Wakitani and Talluri et al. fail to appreciate the advantages of this claimed feature. In addition, there is no technical suggestion or motivation disclosed in Sambonsugi et al., Wakitani or Talluri et al. to define this claimed feature. Thus, the Applicants submit that the combination of Sambonsugi et al., Wakitani and Talluri et al. cannot make obvious the Applicants' claimed feature of calculating a plurality of predictors to provide predictions of a value of each of the plurality of pixels, the predictions based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel.

Amended independent claim 94 of the Applicants' claimed invention includes a method for processing an image sequence having a plurality of pixels. The method includes processing the image sequence on a pixel scale to determine a current background model and provide initial assignments to each of the plurality of pixels, and calculating a plurality of predictors to provide predictions of a value of each of the plurality of pixels. The predictions are based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel. The method also includes refining the pixel processing by processing on a spatial scale other than the pixel scale to maintain a background model of the image sequence.

As discussed above, Sambonsugi et al. and Wakitani are lacking this material claimed feature.

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Talluri et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Talluri et al. merely disclose producing a "residual image" using a "predicted frame" and an "input frame" (col. 13, lines 9-11). In particular, Talluri et al. subtracts a predicted frame from the input frame to produce the residual image, which is the "difference between predicted and actual pixel values" (col. 13, lines 9-12). However, unlike the Applicants' claimed invention, Talluri et al. does not make multiple history-based predictions about a single pixel for every pixel in an image sequence, where the history-based predictions are based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel.

Sambonsugi et al., Wakitani and Talluri et al. also fail to appreciate or recognize the advantages of the Applicants' claimed feature of calculating a plurality of predictors to provide predictions of a value of each of the plurality of pixels, the predictions based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel. These advantages are discussed above.

The Applicants, therefore, submit that obviousness cannot be established since the combination of Sambonsugi et al., Wakitani and Talluri et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of calculating a plurality of predictors to provide predictions of a value of each of the plurality of pixels, the predictions based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel. In addition to explicitly lacking this feature, the combination of Sambonsugi et al., Wakitani and Talluri et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Sambonsugi et al., Wakitani and Talluri et al. does not render the Applicants' claimed invention obvious because each of the references is missing the material feature of the Applicants' claimed invention of calculating a plurality of predictors to provide

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predictions of a value of each of the plurality of pixels, the predictions based on a history of actual pixel values for the predicted pixel and a history of predicted pixel values for the predicted pixel. Consequently, because a prima facie case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claim 94 is patentable under 35 U.S.C. § 103(a) over Sambonsugi et al. in view of Wakitani and further in view of Talluri et al. based on the legal and technical arguments set forth above. The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claim 94.

The Office Action rejected claims 8 and 20 under 35 U.S.C. § 103(a) as being unpatentable over the combination Sambonsugi et al. and Wakitani as applied to claim 7, and further in view of Jain et al. (U.S. Patent No. 6,263,091). The Office Action contended that the combination of Sambonsugi et al. and Wakitani discloses all elements of the Applicants' claimed invention except for disclosing speckle removal. However, the Office Action stated that Jain et al. disclose a technique to isolate foreground and background using speckle removal. Therefore, the Office Action asserted that it would have been obvious to use speckle removal as an enhancement technique because speckle removal is well known in the art to aid in the removal of noise, dirt, breaks and smudges in input images.

In response, the Applicants respectfully traverse these rejections based on the amendments and the arguments above for independent claims 1 and 16. Based on those arguments, the Applicants respectfully submit that amended independent claims 1 and 16 are patentable under 35 U.S.C. § 103(a) over the combination of Sambonsugi et al. and Wakitani.

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Jain et al. add nothing to the cited combination that would render the Applicants' claimed invention obvious. Jain et al. merely disclose a system and a method for segmenting foreground and background portions of digitized images. The Applicants' claimed feature of providing multiple history-based predictions for a value of each of the plurality of pixels, where the multiple history-based predictions based on a history of actual pixel values and a history of predicted pixel values, is not discussed. Consequently, no motivation or suggestion for this claimed feature of the Applicants' invention is provided. Absent this teaching, motivation or suggestion, Jain et al. cannot render the Applicants' claimed invention obvious (MPEP § 2143.01).

Jain et al. added to the combination of Sambonsugi et al. and Wakitani also still fails to appreciate or recognize the advantages of the Applicants' claimed feature of providing multiple history-based predictions for a value of each of the plurality of pixels, where the multiple history-based predictions based on a history of actual pixel values and a history of predicted pixel values.

The Applicants, therefore, submit that obviousness cannot be established since the combination of Sambonsugi et al., Wakitani and Jain et al. fails to teach, disclose, suggest or provide any motivation for the Applicants' claimed feature of providing multiple history-based predictions for a value of each of the plurality of pixels, where the multiple history-based predictions based on a history of actual pixel values and a history of predicted pixel values. In addition to explicitly lacking these features, the combination also fails to implicitly disclose, suggest, or provide motivation for this feature. Further, the combination also fails to appreciate advantages of this claimed feature.

Therefore, as set forth in *In re Fine* and MPEP § 2142, the combination of Sambonsugi et al., Wakitani and Jain et al. does not render the Applicants' claimed invention obvious because the references are missing at least one material feature of the Applicants' claimed invention. Consequently, because a prima facie case of obviousness cannot be established due to the lack of "some teaching, suggestion, or

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incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicants respectfully submit that amended independent claims 1 and 16 are patentable under 35 U.S.C. § 103(a) over the combination Sambonsugi et al. and Wakitani as applied to claim 7, and further in view of Jain et al. based the amendments to claims 1 and 16 and the legal and technical arguments set forth above and below. Moreover, claim 8 depends from amended independent claim 1 and claim 20 depends from amended independent claim 16, and thus also are nonobvious over the combination Sambonsugi et al. and Wakitani as applied to claim 7, and further in view of Jain et al. (MPEP § 2143.03). The Applicants, therefore, respectfully request reexamination, reconsideration and withdrawal of the rejection of claims 8 and 20.

Conclusion

Because the Applicants' claimed invention includes features neither taught, disclosed nor suggested by the art cited in the Office Action, the Applicants respectfully submit that the rejections of claims 1-20 and 93-98 has been overcome.

The Applicants, therefore, submit that claims 1-20 and 93-98 of the subject application are in condition for immediate allowance. The Examiner, therefore, is respectfully requested to withdraw the outstanding rejections of the claims and to pass all of the claims of this application to issue.

In an effort to expedite and further the prosecution of the subject application, the Applicants kindly invite the Examiner to telephone the Applicants' attorney at (805) 278-8855 if the Examiner has any comments, questions or concerns, wishes to discuss any aspect of the prosecution of this application, or desires any degree of clarification of this response.

Respectfully submitted,

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